

Brain&Life

<https://www.brainandlife.org/>

Safety June/July 2025

By Hallie Levine

Natural Disasters Can Be More Dangerous for People with Neurological Conditions—Here's How You Can Prepare



Illustration by Jun Cen

Living in Florida, Theresa Walton, 58, is no stranger to tropical storms that can knock out power for a day or two. But when Hurricane Helene swept through her neighborhood in Lady Lake in September 2024, it left her without electricity for four days.

That power loss was more than just an inconvenience. Walton has Bethlem myopathy, a rare form of [muscular dystrophy](#) that causes extreme muscle weakness. She relies on electricity to operate her wheelchair during the day and her bilevel positive airway pressure (BiPAP) device at night to help her breathe.

“The first two nights, I got virtually no sleep because I had such a hard time breathing when I lay down,” recalls Walton, who also dramatically rationed her electric wheelchair use. “I can only go a day and a half without charging it, so I used it as little as possible.” Instead, she relied on a manual wheelchair, opting only to use the electric one to help her get to the bathroom and her bedroom.

Eventually, her husband figured out a solution. When the local auto store reopened, he bought an inverter that let him charge her wheelchair and BiPAP with their car battery. “I

don't know what I would have done without that," Walton says. "A few hotels in town had power, but I'd toured their rooms before and found that they weren't truly accessible for someone in a wheelchair. The only other option would have been to drive to my brother's home, which was 10 hours away."

Stories of injuries and loss of life often accompany natural disasters, from the wildfires by Los Angeles this winter to the earthquake in Myanmar and Thailand this spring. While these events can be devastating for many, they pose specific challenges for people with neurologic conditions, says Mill Etienne, MD, MPH, FAAN, a neurologist and vice chancellor of New York Medical College in Valhalla: "On top of uncertain living conditions, including possibly shortages of food and water, they have to worry about managing their disease. Lack of access to medical care, medications, and extreme stress can cause symptoms to flare or even more serious complications, such as a [stroke](#) or seizure."

These scenarios also may become increasingly common as climate change causes natural disasters to occur more frequently, Dr. Etienne adds. A review in [Neurology](#) in 2023 looked at 364 studies published from 1990 to 2022 and found a link between increased or extreme temperatures and a higher risk of neurologic conditions such as stroke, [migraine](#), and seizures. "As our climate changes, we're often exposed to more airborne pollutants that can worsen neurological symptoms and also raise the risk of stroke," Dr. Etienne says.

It's something all neurologists—and their patients—need to be aware of, adds Kimberly Monday, MD, vice chair of clinical operations for the department of neurology at the University of Texas Health Science Center in Houston. "Living and working here on the Gulf Coast, we've always had to deal with hurricanes," she says. "But now, we must also deal with ice storms once or twice a year, which paralyzes our city. Whether this is the normal course of history or manmade, the fact that these events are happening more quickly means that we have to be prepared."

Challenges of Providing Care

During the Los Angeles wildfires this January, Meeryo Choe, MD, a pediatric neurologist at UCLA who specializes in headache care, was flooded with phone calls from her patients. "Some of that was due to the air quality, which triggered migraines," she says. "Since Los Angeles is shaped like a basin, a lot of the polluted air is trapped in the city rather than escaping out to the ocean. As a result, patients were exposed to these chemicals—which included not just ash and smoke but also burning household chemicals and cars—for days."

Stress was a second piece of the puzzle. "People with migraines really rely on a consistent schedule, which is almost impossible to maintain if your home has to be evacuated for a wildfire," Dr. Choe says. "These kids had their sleep schedules thrown off, their school schedules thrown off, and their sports schedules thrown off—three things they rely on for consistency. Their stress levels were off the charts, which triggered even worse migraines."

Hospitals and medical centers usually can keep providing care since they run on generators. The biggest issue is getting people there, Dr. Monday says. She took rowboats from her medical center to patients' homes to provide emergency medical care during Hurricane Harvey in 2017, at one point doing CPR on a patient. But even those who weren't in dire straits still had significant challenges. "We'd ask patients what medications they were on, and some just didn't know," Dr. Monday says. "Thankfully, we were able to look many of them up through electronic medical records so that we could get them the care that they needed."

Even people who don't have a neurologic disease may be more likely to have a stroke after a natural disaster. "Air quality is often poorer, which raises the risk of stroke," Dr. Etienne says. "People also experience extreme stress and trauma, which impacts their hearts. They may also not be able to take medications they need to reduce the risk of stroke, such as high blood pressure medications."

Experiencing a natural disaster could impact a person's health later on, too. A 2023 meta-analysis of more than 110 studies published in [Neurology](#) found exposure to air pollutants such as nitrogen dioxide or carbon monoxide significantly increased a person's risk of experiencing a stroke within five days of exposure. Another 2023 study from [Neurology](#) looked at the medical records of more than 21 million Medicare beneficiaries and found that those who lived in areas with high pollution were more at risk of developing [Parkinson's disease](#).

Be Prepared

People with neurologic conditions should always be ready for an emergency, especially if they live in an area prone to floods, fires, hurricanes, or earthquakes, says Anthony Alessi, MD, associate clinical professor of neurology at the University of Connecticut Health in Farmington, who worked with earthquake survivors in Haiti. Ideally, patients will want to discuss their preparations with their neurologist, as they may need to take certain steps for their specific disease. Some recommendations apply to all, though.

Register with utility providers. Many people with neurologic diseases, such as [multiple sclerosis](#), are sensitive to temperature changes. As a result, even a temporary power outage in the summer can cause symptoms to flare, Dr. Monday says. She recommends that patients ask their neurologist for a letter their local energy provider can keep on file. This will help ensure that their neighborhood is on the utility company's priority list to restore power.

Dr. Monday also recommends that patients register with their state's emergency assistance registry so state and local officials can reach out to provide help if patients need to evacuate their homes quickly and head to a safe location. For extra insurance, Dr. Monday recommends that patients give a trusted neighbor an extra copy of their house keys so they can check on them.

Create a "go bag." Dr. Alessi advises that patients should keep a bag prepared with about 72 hours' worth of essential supplies that they can grab at a moment's notice. (See "[Go Bag' Essentials](#)" for more on what you should pack.)

Write down phone numbers and addresses. Keep a paper with any contact information you may need, such as for local hospitals, shelters, and public places with power. You'll need to rely on these lists if your phone dies.

Obtain a cooler bag. If you take medications that need to be refrigerated, you'll also want to make sure you have a travel medicine cooler bag, available through companies like Amazon or Walmart. "They won't keep your medication cold forever, but they can definitely last for a few hours if you need to be evacuated," Dr. Monday says.

Always carry medication with you. Having a few days' worth of your prescriptions with you at all times is key because a sudden emergency may prevent you from reaching home. "We saw that during the wildfires," Dr. Choe says. "People left their homes in the morning to go to work or school and then weren't able to return and were unable to access their medication."

This is especially important for certain neurologic conditions, such as migraines, which often require both abortive and preventative medications, she adds. "My office spent a lot of time in January on the phone with insurance companies asking that they make exceptions and provide early refills to patients who had no way to get home," Dr. Choe says. People also should keep a written list of all their medications and their doctors' information in case they need emergency care.

Make sure you're up to date on vaccinations. Dr. Etienne saw many patients with tetanus after the Haitian earthquake: "It turns out that the community had very low vaccination rates. When crush injuries became infected with contaminated soil, we had a real disaster on our hands." It's important to get a tetanus booster every 10 years and to stay current with flu and COVID-19 vaccines, particularly if you have a neurologic condition. The Centers for Disease Control and Prevention recommends that adults 50 and older get the shingles vaccine as well. You also may want to ask your doctor about other vaccines that may be recommended for you, such as RSV, as well as a measles booster, "since we are seeing it resurface in our communities," Dr. Etienne adds. "You don't want to be battling any of these diseases on top of your neurological condition when you're displaced during a natural disaster."

Consider buying a generator. A whole-house generator, though beneficial, can cost thousands of dollars to buy and install, which is unreasonable for most people, Dr. Etienne says. A less expensive option is a portable generator, which usually costs several hundred dollars. Just make sure that you use it safely. Only operate it outdoors and at least 20 feet from your house to reduce the risk of carbon monoxide poisoning, and have battery-powered carbon monoxide detectors throughout your home to warn you of potential buildup.

Coping with the Aftermath

People sheltering in place after a natural disaster need to watch out for foodborne illnesses and heat- and cold-related injuries, such as heat stroke or hyperthermia. If the power goes out, eat fresh, perishable foods first. An unopened refrigerator will keep foods cold for about four hours, and a full freezer for about 48 hours if the doors remain

closed. If you feel unsure about a food's safety, measure its temperature with a thermometer. If it is warmer than 40 degrees F, throw it away. Dr. Alessi also advises that people should avoid drinking tap water until local officials say it is safe to consume.

People who feel ill or have a medical-related question should call their doctor, Dr. Monday says. If their office is open but you cannot physically visit them, they may be able to provide telemedicine or a phone check-in. If you evacuated, your health insurance provider may cover a visit with a local doctor if the region you left is under a state of emergency. Even so, always check with your insurance provider first.

Doctors should be able to call in prescription refills but may have to contact the patient's insurance provider to get the costs covered. "Most pharmacies can also transfer prescriptions to different ones, especially if they are both part of a large chain," Dr. Choe says.

People should make sure they cope with their emotional health, too, Dr. Alessi says. "Stress can worsen virtually every neurological condition, from migraines to seizures to dementia, so try to get back to your basic routine as quickly as you can," he explains. While that might be difficult, especially if you've evacuated, even sticking close to your regular sleep and meal schedule can help.

Trying some simple mindfulness practices can make a difference and can be as simple as taking five minutes every few hours to sit quietly and do some deep breathing, according to Dr. Choe.

Social connection is important, too. "People have been displaced from their homes, their schools, their workplaces, and their family and friends," Dr. Choe says. "It's important to interact with others, even if it's just taking the time to speak to a loved one on the phone."

Walton credits social support for helping her get through Hurricane Helene. "Since we could use our car to charge things, our driveway became the central point for any neighbor who needed a device charged," she says. "It was comforting because it was also a way for all of us to check in on one another. It was reassuring to have that human connection."

Walton has made sure she's prepared for the next natural disaster, buying a small generator to charge devices such as her wheelchair, BiPAP, and cell phones. She also keeps emergency medication on hand. "With the world the way it is, it's unrealistic to assume this was just a one-off event," Walton says. "I may not be able to prevent another hurricane from happening near me, but I can make sure I'm [as] prepared as possible for one."

'Go Bag' Essentials

Everyone in a household should have a "go bag" they can grab during an emergency that contains enough essentials for three days, says Anthony Alessi, MD, an associate

clinical professor of neurology at the University of Connecticut Health in Farmington. Each bag should contain:

1. Three large bottles of drinking water. “This is very important because after a natural disaster, tap water may not be drinkable, and dehydration can worsen any neurological condition,” Dr. Alessi stresses. You also should have some water purification tablets in case you run out of your bottled supply.
2. Packaged food, such as peanut butter and crackers; canned meat, fruit, and vegetables; granola and protein bars; dehydrated meats like beef jerky; and instant oatmeal, pasta, and rice.
3. A first aid/medical kit with an over-the-counter pain reliever such as acetaminophen, medical gloves, bandages, and antibiotic ointment.
4. Face masks and hand sanitizer. “Ideally, you want N95 or KN95 masks, which do the best job of filtering out everything from viruses to toxic air particles,” says Meeryo Choe, MD, a pediatric neurologist at UCLA.
5. Flashlight with batteries
6. Blanket
7. AM/FM emergency radio with batteries
8. An extra pair of glasses and a week’s supply of contact lenses, if you wear them.

You also should pack a seven-day supply of all prescription medications plus paper copies of the prescriptions. If you use a baclofen pump—a device that continuously delivers the muscle relaxant into your spinal canal—ask your doctor for a week’s supply of the drug in pill form, says Kimberly Monday, MD, vice chair of clinical operations for the neurology department at University of Texas Health Science Center in Houston. “That way, if your pump runs out of medicine but you can’t physically get to your doctor, you won’t go into withdrawal,” she adds.

Disaster Relief

When a natural disaster strikes, these organizations can help you get your life back on track. Keep a hard copy of this list in a folder with other important emergency information in case you lose internet access or your cell phone dies.

- [American Red Cross](#): During a national emergency, you can check the Red Cross's website for a list of its nearby emergency shelters as well as Red Cross Service Sites where you can get food, water, basic medical services like first aid, and access to charging stations so you can power essential devices.
- [Disaster Assistance Improvement Program](#): This website can help you apply for disaster aid through the Federal Emergency Management Agency and guide you

to other resources to help you recover. You also can apply for FEMA aid in person at your local FEMA disaster recovery center; visit [FEMA](#) to find a location.

- [Rebuilding Together](#): This organization provides an online directory where you can find state and local volunteer programs to help with home repair after a national disaster.
- [Salvation Army Emergency Disaster Services](#): The Salvation Army provides disaster relief such as food services, emergency communications, and disaster social services.

<https://www.brainandlife.org/articles/natural-disasters-neurological-conditions-prepare>